AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) An optical ~~Optical~~ packet node for receiving and transmitting optical packets, said packet node comprising:

a multiwavelength band splitting device for splitting received optical packets ~~packes~~ transmitted via multiwavelength bands into at least three groups, each group comprising ~~including~~ one multiwavelength band,

a multiwavelength band combining device for combining said at least three groups of multiwavelength bands,

at least two optical packet add drop multiplexers, each optical packet add drop multiplexer ~~being~~ placed between said multiwavelength band splitting device and said multiwavelength band combining device, and each optical packet add drop multiplexer serving to add at least one individual wavelength to a respective multiwavelength band group and to drop at least one individual wavelength from ~~to~~ a respective ~~group of a~~ multiwavelength band group, and

a load balancing stage ~~being~~ connected to said at least two ~~of said~~ optical packet add drop multiplexers[[,]] to provide an interconnection between at least two multiwavelength wavelength band groups, wherein said load balancing stage manages traffic levels of optical packets to

prevent overload by shifting selected packets from one multiwavelength band group to another multiwavelength band group~~bands~~.

2. (*Currently Amended*) The optical ~~Optical~~ packet node as claimed in claim 1, wherein said load balancing stage comprises ~~includes~~ a ~~an electric~~ packet switch to provide ~~a~~ load balancing between the data packets to be added and transmitted and the available wavelength capacity.

3. (*Currently Amended*) The optical ~~Optical~~ packet node as claimed in claim 1, wherein said optical~~Optical~~ packet node further comprises at least two interface modules ~~being~~ connected to the load balancing stage to provide the data packets to be added and transmitted.

4. (*Cancelled*).

5. (*Currently Amended*) The optical ~~Optical~~ packet node as claimed in claim 1, wherein said multiwavelength band splitting device comprises ~~includes~~ a demultiplexer, a filter[[,]] or a coupler, and ~~that~~ said multiwavelength band combining device comprises ~~includes~~ a multiplexer or a combiner.

6. (*Currently Amended*) The optical ~~Optical~~ packet node as claimed in claim 1, wherein the load balancing stage is telemetrically programmable.

7. (*Currently Amended*) An optical ~~Optical~~ packet add drop multiplexer for receiving and transmitting optical packets and to add and to drop at least one individual wavelength to a ~~group of one~~ multiwavelength band, said packet add drop multiplexer comprising:

a drop stage to drop at least one received individual wavelength of said ~~group of one~~ multiwavelength band, wherein said drop stage comprises a series connection of:

a multiwavelength band splitting device for splitting received optical packets transmitted via said group of one multiwavelength band into individual wavelengths, and

a wavelength selector to select the wavelengths to be dropped and the wavelengths not to be dropped, and

a transit stage to forward at least one received individual wavelength of said ~~group of one~~ multiwavelength band, wherein said transit stage comprises a series connection of:

a multiwavelength band splitting device for splitting received optical packets transmitted via said group of one multiwavelength band into individual wavelengths,

a wavelength selector to select the wavelengths to be forwarded and the wavelengths not to be forwarded, and

a multiwavelength band combining device for combining said selected wavelengths to be forwarded, and

an add stage to add at least one individual wavelength to said ~~group of one~~ multiwavelength band, each added wavelength being unequal to each of the forwarded wavelengths, wherein said add stage comprises a series connection of:

a wavelength selector to select the wavelengths to be added and the wavelengths not to be added, and

a multiwavelength band combining device for combining said selected wavelengths to be added, and

a wavelength band coupler to forward a portion ~~X%~~ of the optical signal power of the received optical packets to a first output, and to forward the remaining portion ~~100-X%~~ of the optical signal power to a second output, the first output ~~being~~ connected to the transit stage and the second output ~~being~~ connected to the drop stage, and

a coupler to couple the output signals of the transit stage and the output signals of the add stage.

8. (*Cancelled*).

9. (*Currently Amended*) The optical ~~Optical~~ packet add drop multiplexer as claimed in claim 7[[8]], wherein said optical packet add drop multiplexer further comprises a control unit to control the selection of the wavelengths to be dropped, the wavelengths ~~those~~ to be forwarded, and the wavelengths ~~those~~ to be added.

10. (*Currently Amended*) The optical ~~Optical~~ packet node as claimed in claim 1, wherein each of said optical packet add drop multiplexers transmits and receives optical packets and comprises:

~~an optical packet add drop multiplexer for receiving and transmitting optical packets and to add and to drop at least one individual wavelength to and from a group of wavelengths in one multiwavelength band, each said multiplexer comprising:~~

a drop stage to drop at least one received individual wavelength of a ~~said group of one~~ multiwavelength band group,

a transit stage to forward at least one received individual wavelength of said ~~group of one~~ multiwavelength band group,

an add stage to add at least one individual wavelength to said multiwavelength band group~~group of wavelengths~~, each added wavelength being unequal to each of the forwarded wavelengths,

a wavelength band coupler to forward a portion ~~X%~~ of the optical signal power of the received optical packets to a first output, and to forward the remaining portion ~~100-X%~~ of the optical signal power of the received optical packets to a second output, the first output ~~being~~ connected to the transit stage and the second output ~~being~~ connected to the drop stage, and

a coupler to couple the output signals of the transit stage and the output signals of the add stage, ~~and~~

wherein said optical packet add drop multiplexers are connected to a common synchronization and management unit providing ~~provides~~ synchronization and management ~~to all said optical packet add drop multiplexers~~.

11-12. (*Cancelled*).

13. (*Currently Amended*) An optical ~~Optical~~ packet node for receiving and transmitting optical packets, said packet node comprising:

a multiwavelength band splitting device for splitting received optical packets ~~packes~~ transmitted via multiwavelength bands into at least three groups,, each group comprising ~~including~~ one multiwavelength band,

a multiwavelength band combining device for combining said at least three groups of multiwavelength bands,

at least one optical packet add drop multiplexer[[,]] ~~each optical packet add drop multiplexer being~~ placed between said multiwavelength band splitting device and said multiwavelength band combining device, and said ~~each~~ optical packet add drop multiplexer serving to add at least one individual wavelength to a respective multiwavelength band group and to drop at least one individual wavelength from ~~to~~ a respective ~~group of a~~ multiwavelength band group, and

at least one optical packet cross-connect[[,]] ~~each optical packet cross-connect being~~ placed between said multiwavelength band splitting device and said multiwavelength band

combining device, said at least one ~~and each~~ optical packet cross-connect serving to switch at least one individual wavelength of a respective group of a multiwavelength band, and

a load balancing stage connected to said at least one optical packet add drop multiplexer to provide an interconnection between at least two multiwavelength wavelength band groups, wherein said load balancing stage manages traffic levels of optical packets to prevent overload by shifting selected packets from one multiwavelength band group to another multiwavelength band group.

14. (*New*) The optical packet node as claimed in claim 1, wherein the load balancing stage converts optical packets transmitted over a first wavelength of a multiwavelength band group to a second wavelength of another multiwavelength band group for transmission.

15. (*New*) The optical packet node as claimed in claim 1, wherein the load balancing stage stores low priority optical packets that were dropped to transmit high priority optical packets, said stored low priority optical packets being transmitted to fill gaps between high priority optical data.

16. (*New*) The optical packet node as claimed in claim 1, wherein the load balancing stage stores low priority optical packets that were dropped to transmit high priority optical packets, said stored low priority optical packets being subsequently transmitted over an available wavelength in a multiwavelength band group.

17. (*New*) The optical packet node as claimed in claim 1, wherein said packet node further comprises at least one optical packet cross-connect.

18. (*New*) The optical packet node as claimed in claim 13, wherein said at least one optical packet add drop multiplexer comprises a plurality of optical packet add drop multiplexers and at least one optical packet cross-connect comprises a plurality of optical packet cross-connects.

19. (*New*) The optical packet node as claimed in claim 13, wherein the load balancing stage converts optical packets transmitted over a first wavelength of a multiwavelength band group to a second wavelength of another multiwavelength band group for transmission.

20. (*New*) The optical packet node as claimed in claim 13, wherein the load balancing stage stores low priority optical packets that were dropped to transmit high priority optical packets, said stored low priority optical packets being transmitted to fill gaps between high priority optical data.

21. (*New*) The optical packet node as claimed in claim 13, wherein the load balancing stage stores low priority optical packets that were dropped to transmit high priority optical packets, said stored low priority optical packets being subsequently transmitted over an available wavelength in a multiwavelength band group.